

**C-A SCHEDULED SHUTDOWN –WEDNESDAY March 3, 2004,**  
**0700-1500HRS**

**RESULTS – 1830HRS. MARCH 3, 2004**

R. Zaharatos – 1600hrs. Tuesday March 2, 2004

**ACCESS TO MACHINE AREAS**

**AGS - CONTROLLED ACCESS**

**BOOSTER – NO ACCESS**

**RHIC - RESTRICTED ACCESS**

**ATR - CONTROLLED ACCESS**

**SEB SWITCHYARD - RESTRICTED ACCESS**

**LINAC – NO ACCESS**

**Operations Schedule for Maintenance**  
**March 3, 2004**

<b>Time</b>	<b>Job</b>	<b>personnel</b>
<b>0630:</b>	<b>Begin CA LOTO AGS. Do Not LOTO H10 DC Bump, Working Hot Permit for heat run of bump.</b>	<b>2CAS</b>
<b>0700:</b>	<b>RHIC to RA all but dumps, RCA for dump survey.</b>	<b>1HP,1MCR.</b>
<b>0700:</b>	<b>Open SWYD RA for J. White et.al.</b>	
<b>0700:</b>	<b>HP to enter AGS for CA Survey (H10 Bump First). Install HEBT door chipmunk for HEBT PP Ops.</b>	
	<b>1MCR/CAS,1HP</b>	
<b>0700:</b>	<b>Booster Remains on with gold for D6 study.</b>	
<b>0715:</b>	<b>Heat run Personnel enter</b>	

**ONLY PERSONNEL LISTED ON WHP MAY ENTER**

**0715: After HP Completes RHIC survey, all RHIC to RA.**

**0730: KAB to Move RS LOTO to Booster BS. Remove SEB Tags.**

**0800: LOTO H10 DC Bump.  
STAR Magnet LOTO 2TECH**

**0800: Open 12 o'clock berm. 1FES.**

**0815: All other CA Access to AGS may commence.  
Safety watches around SWYD Magnet testing. 1FES.**

**0900: Electrical Safety Review walkthrough  
of new AGS Snake Magnet.**

**0930: Barrier Snake for Heat Run (Ray Z et.al.). 1TECH**

**1000: Tandem to repair Object foil in TTB.**

**1400: Beam Available from Tandem.**

**1430: Begin RHIC Sweeps. No 12Z1 (IR) no STAR.**

**1530: Cursory Sweep of the AGS. Close 12 o'clock berm. 2FES.**

**1700: Close AGS, Remove LOTO, Complete RHIC Sweeps.**

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**JOBS STATUS CODES:** C complete IP in-process RS reschedule  
CAN cancelled \* additions

**RHIC JOBS**

**COLLIDER P.S. GROUP - ZAPASEK/BRUNO**

**Maintenance Performed on 3/3/04**

**Tunnel work:**

Voltage Tap box Installation in tunnel at 1010A  
(DONE) 902A will take care of this.

### Snake P.S. and QPA's

- 1) **(DONE)** We need to access alcove 9a to look at bi8-rot3-1.4-ps and figure out why reference to p.s. does not work. (Gregg & Don) **Found setpoint cable disconnected.**
- 2) Put labels on all snake and rotator current reg cards that error adjust = 3v and error delay = 1.67V. The label should say the new card should get adjusted to be the same after being swapped out. We need to access alcoves 3c, 9c, 5c, 7a, 7c and 9A for this work. **HOLD OFF ON THIS, SETTINGS NOT PERMANENT YET.**
- 3) Swap out control card for yo5-rot3-2.3-ps because it tripped off (2/23/04). Maybe go around and exercise all OFF pb's on snake and rotator control cards. **(Gregg & Don) Did not swap out control card. Found that pin 1 (off cmd) was crimped on by one strand. Found AC fault wire popped out of crimp, Found magnetics OT wire had bad crimp. All fixed, then found that moving J11 on 3u chassis kept tripping QPA. After replacing about 4 crimps we swapped out the whole 3u control chassis.**
- 4) **(DONE)** Run up rotators to 10A in 7c and measure voltage across DC cables going to magnet. Also, measure power ten output voltage. **(Gregg & Don)**

### Gamma-T p.s.'s

- a. We need to access alcove 9c and look at bi9-qgt-ps. It likes to jump on its own every once in a while at low current. I think the jump card should be replaced. (Jeff & Tom). **They Found J30 connector on the back of the 3u chassis had 2 pins that would not lock in. The whole connector had to be redone. The jump card was not swapped out.**
- b. **(DONE)** We need to access alcove 1a because it looks like yo12-qgt-ps may have tripped to the OFF state on 2/21 and 2/22. Swap out Control Card). Also check that node card cable and other connections are tight. (Jeff & Tom).
- c. **(DONE)** Go into alcove 7c and investigate Gamma-T DC cables for alcove 7c move. (Brian)

### Correctors (Brian & Rich K)

- 1) **(DONE)** Remove yo8-tv17-ps in the tunnel and examine the resistor R35 on the current sensor card. This p.s. was replaced with S/N 60. 60 had the new R35, C36, it also had the 1k resistor tied from +5V to the output of IC736.
- 2) **(DONE)** Install S/N 529 into slot of bo6-th8-ps. S/N 529 had the new R35, C36, it also had the 1k resistor tied from +5V to the output of IC736.
- 3) **(DONE)** Install S/N 491 into slot yi6-tv8-ps. S/N 491 has the same mods as 529 but it also has the U/V circuit disabled.
- 4) **(DONE)** S/N 540 installed into bi8-th15-ps which tripped on an error fault and could not be recovered. This has the same mods as S/N 529.

### Service Building Work:

#### Joe P Software testing

- 1) **(No need to do?)** Possibly run TAPE and watch if it changes command to 6000A quench switches from On to Charge.
- 2) **(DONE?)** Test New Timing resolver software. This new version will calculate the delays of each signal after the trip. **(Wing and Joe P).**

### Main Power Supplies (Carl, Fred)

- 1) Work on Reg error problem on blue quad. This will require the links being up.
- 2) Fix overshoot on mains.
- 3) **(DONE?)** CHECK THERMOCOUPLE PROBLEM

### Charlie -PLC Program

- 1) **( NO Problems seen)** Anymore last command problems to look at? **(Don and Charlie). TAKING OFF LIST**

### IR supplies and QPA's

- 1) **( NOT DONE)** Check connections between p.s. and qpa of b2-dh0. **(Don and ?).**
- 2) Installed new fan switches in b12-q7-ps and bo11-tq5-ps **(Mitch and Joe)**

### CONTINUED ON NEXT PAGE

### Warm Dipole ps Work

**(DONE)** Get 1012A p.s. running with magnet after magnet is installed. We have to wait for magnets to be installed and connected before we can do work. **(Joe and Don).**

#### Correctors

( **NOT DONE**) Run up remaining alcoves to 10amps and come up with Resistance of load. (**Don**)

6000A Quench Switches-----(**DONE**) Check Current monitoring chassis (**Rich C**)

1006B -(**DONE 3/2/04**) swap out bi5-tq5-ps (**Jeff & Tom**)

#### **IR Supplies, QPA's AND Sextupoles p.s.'s Low Priority**

- 1) If not done already, swap out yi10-q89-ps. The circuit breaker tripped on it at 20:08 on 2/8/04. **TAKING THIS OFF LIST.**
- 2) Check fans on dynapowers for yearly maintenance (Mitch and )
- 3) If there is time add lugs to wires on y8-q7-ps SSR2 (SEE Brain).
- 4) Test all spare sextupole current regulators in one sextupole p.s. with a ramp.
- 5) In 1010A remove node card cable on port 11 (from warm dipole p.s.) and replace this node card in rack R10AQD2. Ports 9 and 10 are bad.
- 6) In 1012A remove node card cable on node card number 12 port 11 for warm dipole. Make sure the warm dipole is connected to port 11.
- 7) Check b12-dh0-qp controller card. CAS swapped it out on 1/17/04 and I want to make sure they did not miss anything. **TAKING THIS OFF LIST.**
- 8) In 1010A label node card cable that goes to port 11 (from warm dipole p.s.)
- 9) Check bo3-qd7 fan switches CAS replaced. **TAKING THIS OFF LIST.**
- 10) Keep an eye on bi9-tq4 fiber optic card (or curr reg card) . This p.s. had a 2 amp offset between the iref and wfg on 1/11/04
- 11) Check voltage lemo of yo9-dh0 and y12-dh0 and compare with buffer card reading. Voltage looks low on pet page. **TAKING THIS OFF LIST.**
- 12) AC Power line monitor problems at 12A and 8b. See PMViewer.
- 13) On 2/11/04 at 2:22:31 bi5-sxf-ps tripped on a lead flow interlock. For some reason this caused yo5-sxd-ps to also trip. Yo5-sxd-ps time stamp is 2:22:29. It should be later than bi5-sxf-ps. Yo5-sxd-ps only shows a quench fault. The current and voltage spike tripping the quench detector and that trips yo5-sxd-ps. There is some kind of crosstalk between these 2 p.s. that should be investigated.

#### Correctors

- 1) Maybe install more correctors in the tunnel with different types of fixes.
- 2) Bi8-oct3 and bi8-dod3 showed "Local/Reset Node card on 2/7/04 and 15:28:46. Keep an eye on this.

#### Other Lower Priority stuff

##### **ATR p.s.'s in service buildings**

Try to put remote I/O alarm bit in for one PLC and try to test one PLC with Joe P to see if it works.

Try cutting wire on old AGS type p.s.'s regulators that brings error readback to MADC. Does this improve Iref/Current readback agreement?

##### **Keep an eye on but don't do anything yet.**

- 1) **Keep an eye on bi12-qs3, it tripped on an error signal fault on 12/3/03 at around 10:20AM. It also tripped once on 12/4, 2x on 12/6 and once on 12/9. This one had C623 cut out of it so I guess it does not fix the error problem.**

Bi8-sx3-ps tripped on an error signal fault once on 12/31/03 at 22:50:11. Looks like a current reg error. Keep an eye on.

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#### **Beam Components and Instrumentation – D. Lehn**

##### Stochastic Cooling Sect. 4 & 11(8hrs.)

- RS** 1. Pick-up tank in sect. 11 - test inchworm controls
- C** 2. Kicker Tank -Sector 4 - investigate Right Plate readback problem
- C** 3. Gap Cleaning - check Chiller Reservoirs

- C 4. Jet Polarimeter – continue set-up
- IP 5. Sect. 7 BPM - begin installation of 80 cables for 7A Alcove move. Investigate BPM Module problems
- C 6. Sectors 1 & 2 - MBPM – Fine Tuning. Schottky Cavity – Fine Tuning
- C 7. Two Meter Kickers – Fine Tuning. QMM( Quad Monitor) - Fine Tuning
- C 8. Install portable loss monitor in Sect. 12(warm dipole)

#### **Controls Hardware(Venegas)**

- IP 1. 1004A and 1004B – investigate RF rebucketing problem(Koropsak)
- C \* 2. Replace WFG module, position C in cfe-5e-ps1

#### **Controls Software(Morris)**

- C 1. Update program software for lead temperature and humidity sys.(Hartmann)

#### **Cryo Controls(Masi)**

- C 1. Install p.s. test rack at 5Q14
- C 2. Check zero drift of lead flow controllers on the Snake Magnets in Svce. Bldgs..

#### **High Frequency Instrumentation – B. Sikora**

- C 1. Sect. 1 & 2 moveable BPM Schottky Cavity and Two Meter Kickers – access for fine tuning required after beam start-up.
- C 2. QMM(Quad Monitor) – will also require access for tuning

#### **RF Group – N. Laloudakis**

##### Sect. 4

- RS 1. Change one Yellow Storage Cavity window
- C 2. BS2 – replace belts for air flow blower
- C 3. X2 – troubleshoot IR temperature sensor for the window

#### **Vacuum Group – S. Gill**

- C 1. **Sublimate:** g9 & g10 (also switch filaments in ring)(Both pwx & pw1)
- C 2. **Sublimate:** g5 & g6 (also switch filaments in ring)(Both pwx& pw1)
- C 3. **Sublimate:** g1 & g2 (also switch filaments in ring)
- C 4. **Sublimate:** ir 8
- C 5. Finalize solenoid wiring & ps testing from 1004
- C 6. Re-install rebuilt PPA's (locations to follow)
- RS 7. Change one Yellow Storage Cavity window
- C \* 8. Warm Dipole Sect. 12 – shorten solenoid cable
- C \* 9. Sect. 7 – repair bo7-tmp-pi21 foreline iso valve and replace turbo
- C \* 10 1002B – install protective cover over floor extension cord to temporary turbo
- C \* 11 Sect. 12 – pick-up 10 5inch heating jackets for NEG bake at 820
- C \* 12 Sect. 12 – pick-up 2 pipe stands for NEG bake at 820

#### **Water Systems Group**

- C 1. Tower 6/1000P – repack tower temperature control
- C 2. TAR/1006 – repack various temperature controls in STAR Pump Rm..

### **Tunnel Maintenance**

- C** 1. Water intrusion in Sect. 12 IR above Jet Target location(FES)
- C** 2. Repair AC in 11c alcove.
- C** 3. Repair lighting in Sect. 9(Elect.)

### **Other RHIC Access Jobs**

- C** 1. Move two 8D8 Warm Magnet from sect. 10 to sect. 12(FES/RHIC PS)
- C** 2. PM for disconnect switch at 1008B

### **RHIC/FES Division – A. Pendzick**

- C** **STAR** - Access for experimenter(>8hrs)
- C** **PHENIX** - Experimenter access(<4hrs)
- C** **BRAHMS** - Experimenter access(<4hrs)
- C** **PHOBOS** - Experimenter access(<4hrs)
  - C** Leak check the PHOBOS beryllium beam pipe.

### **AGS(external)**

- RS** 1. Troubleshoot the datacon networks for A3, D3, I3, J3 and J13 sector valve alarm problems (currently masked)
- IP** 2. Vacuum – A10, E18, and H10 clear DNA read-backs.

### **AGS RING**

- 1. **E20 Snake**
  - C** Electrical Safety Committee in ring inspection/review
  - C** Heat run.
  - RS** Install new buss covers
  - RS** Check survey
- C** 2. Assemble new chamber storage rack in north conj. Area(Vacu. Grp.)
- C** 3. Ring valve solenoid/connector inspection(Vacu. Grp.)
- C** 4. H10 DC Bump – Heat run and final test into ring(Zapasek/Adessi)
- RS** 5. South Wiring Tunnel sprinkler system – investigate reason for valve in closed position(PE Plumbers/J. Lavesque)
- C** 6. L10 through C20 in and out – Inspect areas for proposed relocations of: A20Harp/A20 Flying Wire/A20 Current Transformer, A10 Tune Meter, and BLIP Xformer interlock.(Bm. Comp.)
- C** 7. Current Transformers – Install upgrade for PPM running & test all controls
- C** 8. H20 Septum – Check oil and fill as necessary
- RS** 9. Ring Grounds – Inspection only if ring on restricted access
- IP** 10. Ring Video – Check Following Locations & repair as necessary (H20/E15/CF011/CF100/F5/F10) F5/F10 will be from aisle

- C** 11 C15 Polarimeter – Continue setup for upcoming run
- RS** 12 Measure for trench covers at F8 and I10.
- IP** 13 Ring Motion – Check Following Locations & repair as necessary  
(H20/E15/CF011/CF100/F5/F10/Splitters) F5/F10 will be from aisle
- IP** 14 Turn-on testing of SEB Switchyard magnets

## **BOOSTER RING**

### **Vacuum**

- RS** 1. Check & drain air lines of water
- RS** 2. Ring Grounds – Inspection only if ring on restricted access

## **BOOSTER EXTERNAL**

### **RS BPM's/ Controls Grp.**

- 1. Investigate A3(open) and C3(shorted)
- 2. Filter assemblies above racks
- 3. Install air filter assemblies.
- 4. Repair exhaust fan on C Sect. Rack
- 5. Phase match B4 cables

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- RS** 6. Controls 930A – update Gate Array in PSI's(Buxton)

## **LINAC**

- C** 1. Replace screen mods in driver
- C** 2. Cavity Station 4 – relocate flow transmitter, drain, redo piping, refill, and test.
- RS** 3. HITL Crossover – check connections on ttb-29-i.g.-039 and 064

## **SEB SWITCHYARD**

- IP** 1. Turn-on testing(White Sheets) of SEB Switchyard magnets for D Line run.(Anderson) Requires moving the Radiation Safety LOTO to Booster Extraction(K. Brown)

## **TANDEM**

- C** 1. Foil change(3-4hrs.)